

Fiber-Optic Accelerometers



DESCRIPTION:

The Naval Research Laboratory has developed compact, lightweight, highly sensitive interferometric fiber-optic accelerometers that are suitable for multiplexing, allowing for distributed measurements. The sensors can be embedded in concrete or resin, or mounted on the surface of various structures including bridges, motors, ship hulls and decks, and aircraft. Fiber-optic accelerometers have been extensively field tested by NRL on ships.

ADVANTAGES/FEATURES:

- Low detection limit: 5-300 ng (-130 to -156 dB re g^2/Hz)
- Large dynamic range: >155 dB @ 100 Hz
- Broad frequency range of operation: 0.2 Hz to tens of KHz
- Low cross-axis sensitivity
- Insensitive to electromagnetic or acoustic interference
- Licensable under the following US patents: 4,653,915; 4,889,986; 5,903,349; 5,986,784; 6,056,032; 6,081,633; and 6,285,806 B1

APPLICATIONS:

- Seismology
- Inertial navigation
- Geophysical exploration
- Condition based maintenance of mechanical systems
- Structural health monitoring

CONTACT:

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